

**Protocol
For
Incidental Take Authorization**

Eastern Massasauga Rattlesnake (*Sistrurus catenatus catenatus*)

Note

If carrying out a given protocol is not feasible, or multiple listed species in a given management area pose conflicts, contact the Bureau of Endangered Resources at 608/264-6057. Staff in BER will work with Integrated Science Services (Research) staff, species experts and managers to establish an acceptable protocol for a given site that will allow for incidental take without further legal Consultation or public notice

I. Species Background Information

A. Status

State Status: Endangered.

USFWS Region 3 Species of Management Concern: Yes and a candidate for federal listing.

Number of known WI sites: 6 extant sites are known since the mid-1980's although a total of 49 occurrence records exist; several historical locations are currently being surveyed to determine presence/absence.

Global Range: Southern Ontario and central New York west to extreme eastern Minnesota and south into northern Missouri and central Illinois. In Wisconsin it is presently occurring to Buffalo, Juneau, Monroe, Pepin, Trempealeau and Walworth counties.

B. Habitat

General Habitat Description: The massasauga is not a habitat specialist, but it requires wetland habitat for overwinter survival. This species often occupies sedge meadow complexes associated with medium to large river systems in the state, although they also live in floodplain (lowland hardwood) forests. They are typically found in openings within these forests created by beaver activity,

logging, or other natural openings. Gravid females will often migrate to dry-mesic upland openings to incubate their developing young. These upland sites also include road or railroad dikes and levees built through or adjacent to occupied wetlands.

Over-wintering Habitat: Massasaugas almost always hibernate in wetlands, using crayfish burrows, crevices or rotted-out root canals to reach down to and below the water table to avoid freezing in winter. They may hibernate underwater in these settings. These areas typically flood in spring with no apparent impact to individuals.

C. Life History

Home Range: Variable across its range. Average home range for adult WI males is about 400 acres and non-gravid adult WI females about 102 acres. Gravid WI females' home range is about 7 acres.

Communal Behaviors: NA

Site Fidelity: Some individuals return to the same hibernation location annually.

Nest Location: NA

Breeding: Mating can occur at any time during the active season but peaks in spring and fall. Females are capable of producing young annually, but likely only a portion breeds annually. Eight to twenty young are live-born, usually in August. Young mature in their third or fourth full year.

Nesting Period: NA

Activity periods:

Seasonal: Emergence from hibernation occurs from early-late April and is temperature and frost-out dependent. Usually three consecutive days of mid-60° weather following frost-out will trigger emergence, especially if accompanied by a warm rain.

Daily: Massasaugas are primarily diurnal but will become active at night during especially warm weather in summer. They typically emerge in mid-morning (8:30-10 am) to bask to warm their body temperatures. Once sufficiently warm they often become very difficult to locate as they either begin to forage or continue to bask under filtered cover to avoid overheating. Surveys for massasaugas are typically best during spring before vegetation becomes dense and tall or on cool (mid-upper 60's) overcast days in summer when they tend to be more exposed while seeking radiant heat. Survey periods should include both mornings and evenings and avoid temperatures above 80° F when sunny.

II. Management Protocols For Authorizing Incidental Take

If the management activity is for purpose of recovering, maintaining or improving the grassland, prairie or savanna ecosystem that includes habitat for massasauga rattlesnakes, then incidental take is allowed if these conditions are followed.

Since there are no apparently stable massasauga populations in Wisconsin and each individual is deemed critically important to species survival, no incidental take is allowed. The following protocols are for avoiding take. Only the unlikely taking that may occur inadvertently despite following all the conditions of this consultation and the following management prescriptions is authorized. If incidental take of eastern massasauga rattlesnakes results from the activity, please notify BER so we can reevaluate this guidance.

A. **Burning:**

1. Burns of wetlands¹ (i.e. sedge meadows, fresh wet meadows, wet pasture) is allowed only between November 1 and ~~April 5~~ (new suggested language- until soils temperatures* reach 50° F in spring) with the following exceptions:
 - a) After ~~April 5~~ (new suggested language- soils temperatures reach 50° F in spring), burning may be conducted on days when the ambient air temperature is not expected to reach 50° F during the hours involving the burn.
 - b) ~~On burn days prior to April 5 in years where there is an unusually warm spring (frost out occurs in mid-late March and temperatures reach 60°F on any 3 consecutive days), follow the guidance in the above sentence or contact Bob Hay if you are unsure about the decision. (This bullet is eliminated by the above change.)~~
2. Burning of upland grassland habitats (i.e. mesic or dry mesic prairies or old fields): Allowed only if conducted between October 1 and May 1.

* Soil temperatures are to be taken using a 15 cm probe soil thermometer. Temperatures are to be taken at 15 cm depth in open canopy wetland habitat away from influence from shading by brush and trees and up gradient of surface water. A minimum of 6 random and spread out readings should be taken within this habitat. Use the highest temperature to make the decision on when to burn or not burn based on the above soil temperature cut-off.

Mowing/Haying:

¹ Note: Since surveying for massasaugas is most productive under post-burn periods (the vegetation and duff is gone), please contact BER whenever you conduct a wetland burn on a known or likely massasauga site, so BER can conduct surveys immediately following the burn and prior to green-up. This is our best opportunity to conduct presence/absence surveys and assess population status.

1. If done in wetlands between November 1 and ~~April 4~~ until soils temperatures* reach 50⁰ F in spring there are no restrictions.
2. If done ~~between April 5~~ after soils temperatures* reach 50⁰ F in spring and October 31, should only occur when air temperatures are below 50° F.
3. If done in uplands between October 1 and May 1 there are no restrictions.

B. Selective Brush/Tree-cutting:

Selective cutting (i.e., using a chain saw) may be done without restriction.

C. Grazing:

Light to moderate grazing (0 - <1.0 head per acre) is allowed but should be ceased if more than 50% of the vegetation is cropped below 8 inches in height.

E. Herbiciding:

To the maximum extent possible, herbiciding should occur during the snake's dormant period (Nov. 1- ~~April 5~~ until soils temperatures* reach 50⁰ F in spring).

Where active season herbiciding is necessary to control herbaceous vegetation, spot treat, preferably with a low persistence/short half-life herbicide (i.e. Round-up®), using wick, sponge or hand-held spray applications, not broadcast spraying.

Basal-bark or cut-stump-treatment methods should be used when treating woody vegetation.